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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hidekuni Murakami

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

03/10/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,553	Applicant(s) MURAKAMI, HIDEKUNI	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11-16 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-16 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/15/10; 12/8/09</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 to 7 and 11 to 16 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. The newly amended recitation “N: 0.0031 to 0.0301%” in combination with steel containing Al content as high as 2.5% clearly raises a new matter issue since there is no support for this limitation in the disclosure. This is evident in view of lines 10 to 32 on pages 11 of Applicant's specification which states “ 0.0031 to 0.0301% N is added to Si-deoxidized steel with Al at about 0.005% or less to effectively improve texture and strength”; and further states “when Al is about 0.01% or more, if a large amount of N is included, fine AlN is formed and the magnetic properties are remarkably degraded, so this must be avoided” and “In Al –deoxidized steel, N content should be 0.004% or less”.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1793

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 to 7, 11 to 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reason B of English translation of Japanese Office action dated July 29, 2009 issued in corresponding Japanese Application No. 2005-514520 ("NPL").

6. Reason B teaches Reference 2 (PCT Publication No. 99/47718) in view of Reference 3 (Japanese unexamined Publication No. H10-183247) would closely meet the present invention. Reason B states the following:

Reference 2 discloses that deterioration of magnetic properties can be restrained and increase strength if Cu is precipitated by the nm order in a low carbon steel sheet. As a result, a person with ordinary skill in the art can easily achieve the present invention based on the teaching of the nm order Cu precipitation for increasing high strength for a non-oriented electrical steel sheet described in Reference 3.

7. Claims 1 to 7, 11 to 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 09-241793 (hereafter "JP-793") in view of Table 1.1 in Essential and Incidental elements in steel and cast iron ("NPL").

8. JP-793 closely meets the claimed steel for the reasons stated in the previous office action dated October 2, 2009 but does not contain 0.003 to 0.0301% N. Nevertheless, nitrogen is a conventional steel additive to increase strength properties as taught by NPL. Consequently, to add nitrogen in a range of 0.003 to 0.0301% N would be a matter of routine optimization of an alloying constituent to achieve the desired degree of strength which is well within the skill of the artisan and productive of no new and unexpected results.

Response to Arguments

9. Applicant's arguments filed January 4, 2010 have been fully considered but they are not persuasive.

10. It was argued that JP-793 does not teach a non-oriented electrical steel sheet containing 2 to 6.5% Si and 0.0031 to 0.0301% N as recited in claims.

11. In response to argument, JP-793 teaches steel containing $\leq 3\%$ Si which overlaps and teaches a portion of Applicant's claimed Si range of 2 to 6.5%.

12. In regard to N content, it would be an obvious additive for the reasons stated in preceding paragraph 8.

13. Although a non-oriented electrical utility is not taught by JP-793, such difference would not be a patentable merit since it is merely applicant's future and intended use.

14. Applicant's argument with respect to 35 U.S.C. 103 rejection over Japanese patent 09-209039 ("JP-039") have been fully considered and are persuasive. JP-039 does not teach a metal phase comprised of Cu having a diameter of 0.1 μm or less in the steel sheet as recited in claims; and said metal phase would not be expected since process of making is different. Prior art teaches hot rolling followed by rapid cooling at a rate of 20°C/sec and coiling so as to develop {554} texture at the surface and as a result, coarse Cu precipitates are formed during coiling. On the other hand, according to Applicant, the present invention (table 7) hot rolled steel sheet is slowly cooled for less than 300 seconds in a temperature range of 700°C to 400°C to provide a non-oriented electrical steel sheet containing Cu appropriately treated to form a fine Cu metal phase

Art Unit: 1793

so as to maintain good magnetic properties. Therefore, the rejection has been withdrawn.

15. The IDS filed January 15, 2010 listed Japanese patent Application No. 2002-345999 now Japanese patent 2004-084053 as relevant but it has a publication date of March 18, 2004 which after Applicant's priority dated claimed of October 5, 2003 and has same inventor and assignee as present invention.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

Art Unit: 1793

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/